

Ref. No. N.T. 127  
NEW WELL

**OPEN FILE**

**SUBJECT:** E.L. 55, NEW WELL, N.T. GROUND  
MAGNETOMETER TRAVERSES.

MINES BRANCH  
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**OPEN FILE**

7th December, 1972.

CR 73/41

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7th December, 1972.

Memorandum to: F. E. HUGHES

Copies: K. N. O'Sullivan  
A. F. McQueen  
E. McCarthy

From: M. Kirton

E.L. 55, New Well, N.T.

Ground Magnetometer Traverses

In connection with investigations into the occurrence of uranium mineralisation at shallow depth in the New Well area (Hughes, Tham & O'Sullivan, 1972) two ground magnetometer traverses were run across the area to assist in locating sites for stratigraphic drilling to basement.

The traverses (see Plan No. N.T. 1152) were run on 5th September (K. N. O'Sullivan) and on 29th October, (F. E. Hughes) using a Sharpe MF-1 portable fluxgate magnetometer.

Details of the traverses and comments on the analysis of the results are as follows:

TRAVERSE NO. 1

The traverse was run northwards from No. 21 Bore on Narwietooma Station for a distance of 27.45 km, with readings being taken every 50 m along the traverse. The instrument was standardised at an arbitrarily selected base station in the area, and re-read there twice daily. On completion of the survey, all results were corrected for drift. The profile for this traverse is appended as Plan No. N.T. 1150.

Comments

1. This traverse shows three anomalies suitable for depth determinations. There is also a broad high between stations 6.000 and 9.000 which is too irregular in shape for depth calculations to be made. Assuming that all magnetic expression in this area is due to lithological changes in the Archaean basement, irregular variations in magnetic field strength indicate irregular variations in the basicity of the bedrock.
2. The broad anomaly between stations 2.500 and 4.500 is due to a well defined lithological change and the depth to the top of this magnetic body is  $550 \pm 50$  m. The contents of this report remain the property of C.R.A. Exploration Pty. Limited and may not be published in whole or in part nor used in a company prospectus without the written consent of the Company.

3. There are two sharp anomalies at stations 23.800 and 24.550, although in fact the plotted maximum of each is defined by a single observation so that the true anomaly maximum can be up to 50 m on either side of the plotted maximum. This of course affects the depth calculation. The greatest depths commensurate with the shapes of these two anomalies are 50 and 60 m respectively; the minimum possible depths are zero, i.e. outcrop. For more precision additional observations at 10 m spacing across these two anomalies were recommended.

#### TRAVERSE NO. 2

In accordance with the recommendation above, this traverse was run northwards for a distance of 1.54 km from the peg at station 22.95 km on Traverse No. 1 to station 24.49 km (see Plan No. N.T. 1151). Readings were taken every 10 m along the traverse and, on completion, all readings were corrected for drift. The profile for this traverse is appended as Plan No. N.T. 1151.

#### Comments

Three anomalies are sufficiently smooth to give depth estimates. They are:

1. Station 23.79 km - depth to basement 7 m.
2. Station 23.41 km - depth to basement 6 m.
3. Station 23.31 km - depth to basement 7 m.

#### CONCLUSION

The results indicate that magnetic basement occurs at very shallow depth in the vicinity of the detailed traverse north of New Well and that other site(s) must be chosen for satisfactory tests of the Tertiary sequence.

MK: jm

*M. Kirton*  
M. Kirton

#### REFERENCE

- |                   |      |                                      |
|-------------------|------|--------------------------------------|
| Hughes, F. E.,    | 1972 | Exploration Licence No. 55, New      |
| Tham, G. H. and   |      | Well, N.T. Report on Investigations. |
| O'Sullivan, K. N. |      | C.R.A.E. Report (Unpubl.).           |

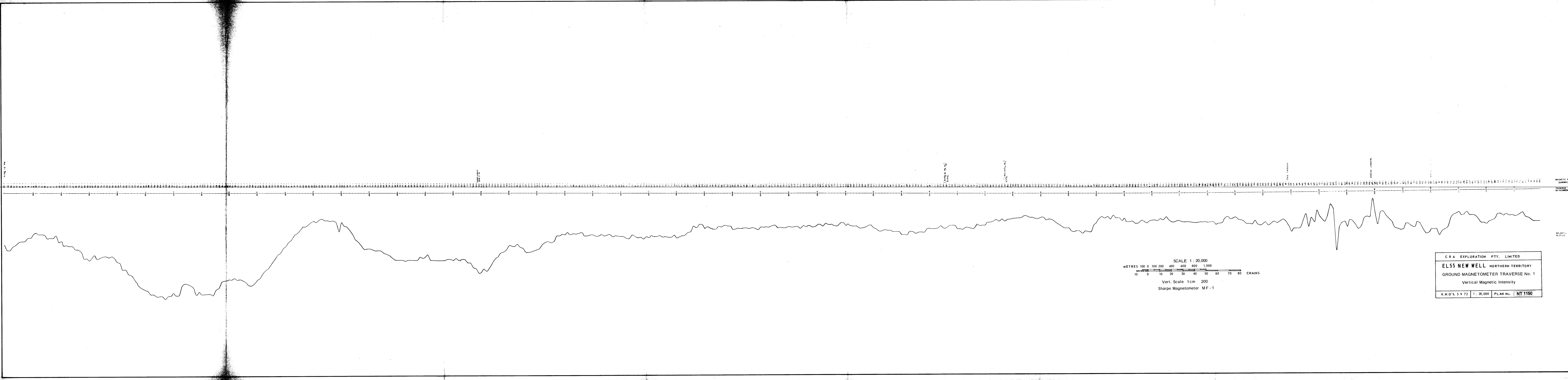
KEYWORDS

Uranium, sediments-undiff., facies-continental, basin-closed, Tertiary, Precambrian, geophys.-mag.

Locality: Napperby SF 53-9 1:250,000 map sheet.

PLANS

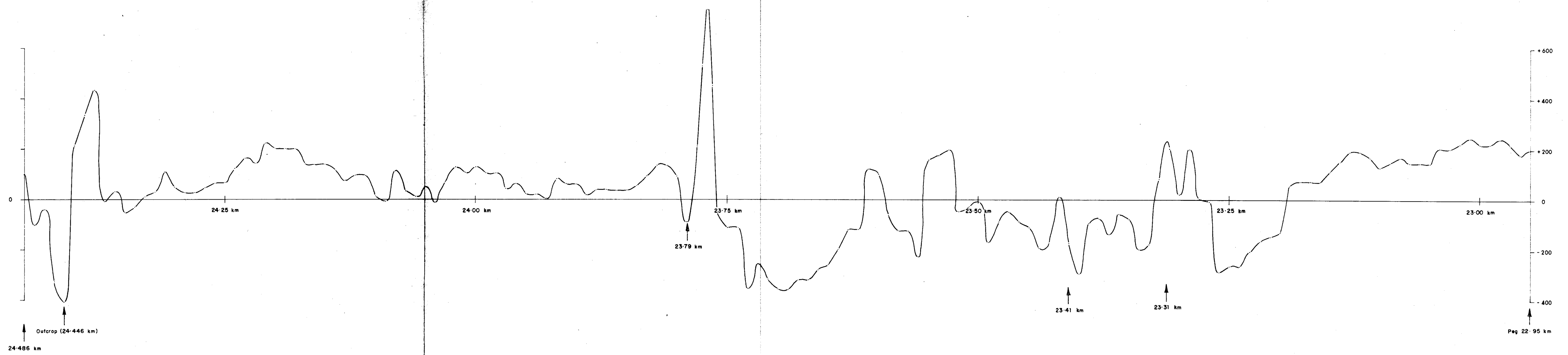
			<u>Scale</u>
N.T. 1152	E.L. 55, New Well, N.T. Ground Magnetometer Traverses, Locality Plan.		1:250,000 ✓
N.T. 1150	E.L. 55, New Well, N.T. Ground Magnetometer Traverse No. 1, Vertical Magnetic Intensity.		1:20,000 ✓
N.T. 1151	E.L. 55, New Well, N.T. Ground Magnetometer Traverse No. 2, Vertical Magnetic Intensity.		1:2,500 ✓



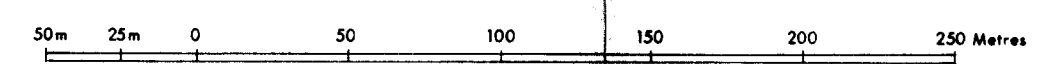
SCALE 1 : 20,000  
 METRES 100 0 100 200 400 600 800 1,000  
 10 0 10 20 30 40 50 60 70 80 CHAINS  
 Vert. Scale 1cm 200  
 Sharpe Magnetometer MF-1

C R A EXPLORATION PTY. LIMITED		
EL55 NEW WELL NORTHERN TERRITORY		
GROUND MAGNETOMETER TRAVERSE No. 1		
Vertical Magnetic Intensity		
K.N.O.'S. 5 9 72	1 : 20,000	PLAN No. NT 1150

MAGNETIC READINGS (GAMMAS)  
 TRAVEL IN KILOMETRES  
 MAGNETIC INTENSITY

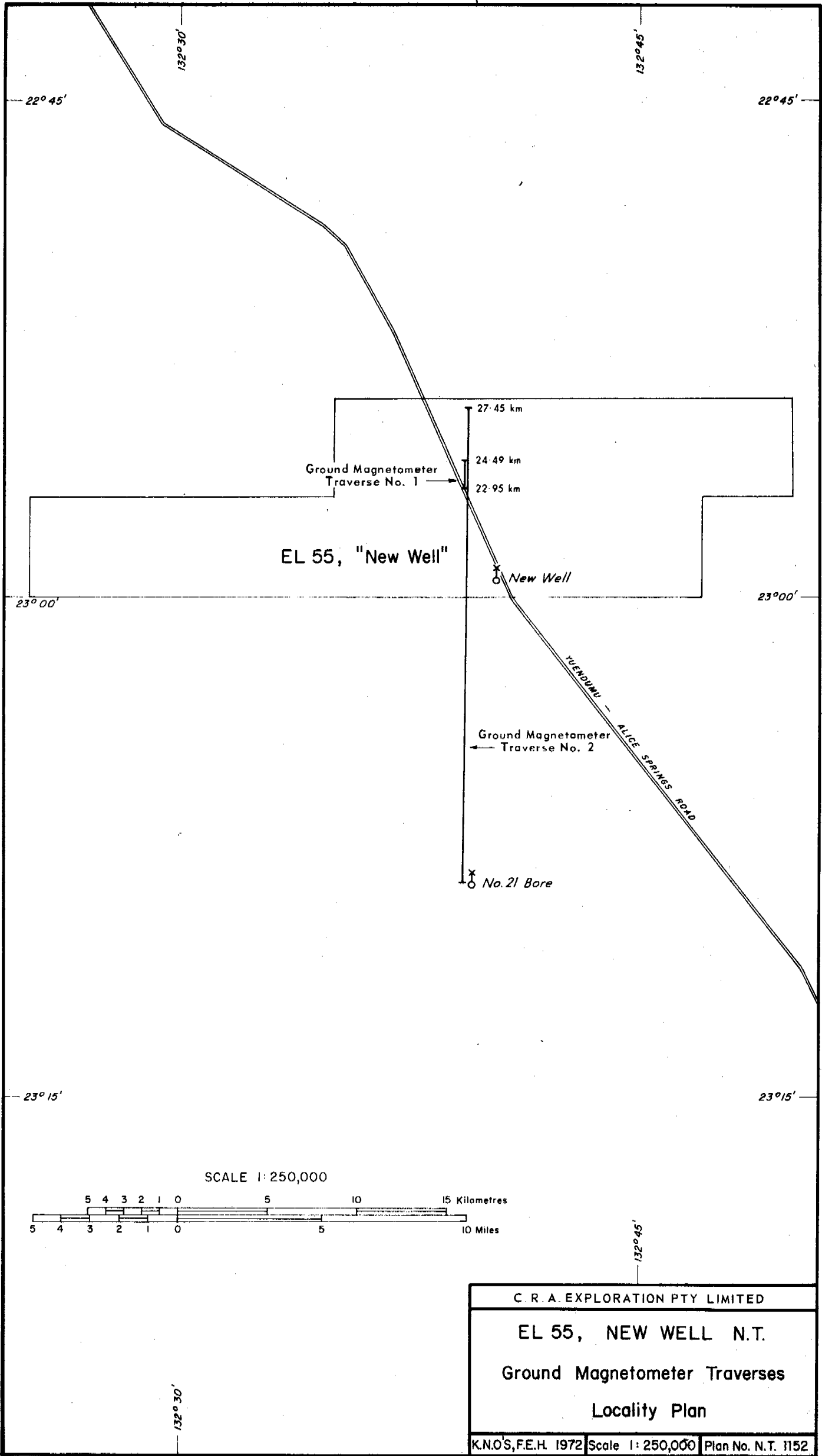


SCALE 1:2,500



Vert. Scale 1cm = 100 γ  
 Sharpe Magnetometer MF-1

C. R. A. EXPLORATION PTY LIMITED		
EL 55, NEW WELL N.T.		
Ground Magnetometer Traverse No.2		
Vertical Magnetic Intensity		
F.E.H. 29/10/72	Hor. Scale 1:2,500	Plan No. N.T. 1151



22° 45'

132° 30'

132° 45'

22° 45'

27.45 km

24.49 km

22.95 km

Ground Magnetometer Traverse No. 1

EL 55, "New Well"

New Well

23° 00'

23° 00'

Ground Magnetometer Traverse No. 2

WUNDURU - ALICE SPRINGS ROAD

No. 21 Bore

23° 15'

23° 15'

SCALE 1:250,000



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EL 55, NEW WELL N.T.

Ground Magnetometer Traverses

Locality Plan

K.N.O.S., F.E.H. 1972 | Scale 1:250,000 | Plan No. N.T. 1152